

*CLAIM AMENDMENTS*

1. (Currently Amended) A method ~~for~~ of manufacturing a semiconductor optical device comprising:

~~step for forming growing~~ an epitaxial ~~growth layer structure~~ containing at least an active layer which can emit light, ~~using of~~ a III-V group semiconductor material including a group V element;

~~step for forming an insulation insulating~~ layer over the epitaxial ~~growth layer structure~~, which can prevent the V group element from escaping during heat treatment;

~~step for applying heat treatment to treating~~ the epitaxial ~~growth layer structure~~ at a temperature of at least 800 degree degrees C or more;

~~step for removing the insulation insulating~~ layer.

2. (Currently Amended) The method ~~for~~ of manufacturing a semiconductor optical device according to Claim 1 comprising: ~~step for performing PL~~ a photoluminescence measurement after the heat treatment step treating.

3. (Currently Amended) A semiconductor optical device comprising: an epitaxial ~~growth layer formed structure~~ of a III-V group semiconductor material, containing at least an active layer which can emit light, wherein the composition of the epitaxial ~~growth layer is changing~~ structure continuously changes near the an interface.

4. (Currently Amended) The semiconductor optical device according to Claim 3, wherein a photoluminescence wavelength of the optical device is blue-shifted, as compared to a semiconductor optical device which has an active layer with the same composition as said active layer and an epitaxial ~~growth layer whose structure with a composition is changed that changes~~ stepwise near the interface.

5. (Currently Amended) The semiconductor optical device according to Claim 4, wherein the photoluminescence wavelength is blue-shifted by at least 20 meV or more.

6. (Currently Amended) The semiconductor optical device according to Claim 3, wherein distortion between of the epitaxial ~~growth layers structure~~ is more eased, as reduced compared to a semiconductor optical device which has an active layer with the same

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composition as said active layer and an epitaxial ~~growth layer whose structure with a~~  
~~is changed changing~~ stepwise near the interface.